

Abstract

Microelectromechanical (MEMS) devices that use MEMS electromagnetic actuators to selectively generate displacement forces are disclosed herein. According to one exemplary embodiment disclosed herein, a MEMS device may include a substrate having a surface, an actuable element at least partially formed from the substrate, and an electromagnetic actuator disposed on the substrate for selectively applying a first force to the actuable element to displace the actuable element along a path. The actuable element may have a base and an arm coupled to the base. The base may include a portion comprised of a magnetic material. The electromagnetic actuator may comprise an electrically conductive coil, and the path of the actuable element may pass through a coil gap in the coil. The electromagnetic actuator may also comprise a magnetic core about which the electrically conductive coil may be wound.